

Sunbathing in Yellow-billed Kite *Milvus migrans parasitus*

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Prise de bain de soleil chez le Milan à bec jaune *Milvus migrans parasitus*. Au Mali, le 24 novembre 2013, un Milan à bec jaune *Milvus migrans parasitus* se fit observer prenant un bain de soleil au milieu de la journée. L'oiseau faisait entièrement face à un fort soleil, en adoptant des postures ailes-déployées, ailes-delta et queue-en-éventail (12 minutes) ; ces postures furent interrompues par deux périodes de toilettage (deux et trois minutes chacune), avec symptômes d'hyperthermie (halètement, soulèvement des couvertures alaires et des plumes du croupion).

Summary. In Mali, an adult Yellow-billed Kite *Milvus migrans parasitus* was observed sunbathing in the middle of the day on 24 November 2013. The bird faced a fierce sun throughout, using spread-wing, delta-wing and tail-spread postures (12 minutes), with two intermittent preening bouts (two and three minutes each) during which it showed symptoms of hyperthermia (panting, lifting the wing-coverts and rump feathers).

In the Inner Niger Delta in Mali (15°18'62.88"N 04°08'166"W), on 24 November 2013 at 12.30 hrs, we checked a solitary *Faidherbia albida* for the presence of Palearctic warblers, part of a long-term study into the habitat choice of Eurasian passerines in their wintering areas in West Africa. The large tree, 16 m high and 28 m in diameter, contained four nests of a pair of Yellow-billed Kites *Milvus migrans parasitus*. The kites circled nearby without giving alarm calls; neither was moulting its flight feathers. The condition of the nests, combined with the behaviour of the kites, showed that breeding was not yet underway. Just after noon, one of the adults landed in the tree and perched for a short period near one of the nests. It then flew to a dead branch in the crown of the tree where it started preening, facing the sun. The weather was slightly overcast, but with bright sunshine, hardly any wind and a max. temperature of 32°C, like the previous days.

From our pirogue we had an excellent view of the kite at a distance of c.30 m. It was completely at ease in our presence, as is typical of the species in the Inner Niger Delta where it is commensal (Bijlsma *et al.* 2005). During a preening bout of two minutes, targeted at the mantle, lower back and primary and greater coverts, the bird fluffed out its greater wing-coverts and rump feathers, partially closed its eyes (lower eyelid lifted upwards) and opened the bill slightly (Fig. 1), suggestive of cooling behaviour in combination with feather care. It then spread its wings until a full spread-wing posture was attained, although the wings were not fully extended and 'locked' (Fig. 2), exposing the underside to the sun (but

not in a position perpendicular to the plane of radiation). The tail remained closed. The kite most often faced the sun sideways, with the lower eyelids covering the eyes though not permanently, and rarely both at the same time. This posture was maintained for five minutes, after which the wings were gradually folded and another bout of preening commenced, again mainly focused on the mantle, lower back and wing-coverts (this time including underwing-coverts). During this episode, the bird showed signs of heat stress, the bill slightly opened and feathers of the head, rump



Figure 1. View of the *Faidherbia albida* along the Mayo Dembé, a tributary of the Niger River, where the Yellow-billed Kite *Milvus migrans parasitus* was recorded sunbathing, Mali, 24 November 2013 (Rob G. Bijlsma)

Le *Faidherbia albida* au bord du Mayo Dembé, un affluent du fleuve Niger, où le Milan à bec jaune *Milvus migrans parasitus* fut observé prenant un bain de soleil, Mali, 24 novembre 2013 (Rob G. Bijlsma)



Figure 2. Yellow-billed Kite *Milvus migrans parasitus* preening, with feathers fluffed out and eyes partially closed, Mali, 24 November 2013 (Jan van der Kamp)

Milan à bec jaune *Milvus migrans parasitus* faisant sa toilette, avec plumage ébouriffé et yeux mi-clos, Mali, 24 novembre 2013 (Jan van der Kamp)

Figure 3. Wing-spread posture of Yellow-billed Kite *Milvus migrans parasitus*, facing the sun, with tail and bill closed, Mali, 24 November 2013 (Jan van der Kamp)

Pose ailes-déployées du Milan à bec jaune *Milvus migrans parasitus* faisant face au soleil, avec queue et bec fermés, Mali, 24 novembre 2013 (Jan van der Kamp)

Figure 4. Yellow-billed Kite *Milvus migrans parasitus* showing heat stress, i.e. panting, eyes half-closed, and fluffed mantle, wing-coverts and undertail-coverts, Mali, 24 November 2013 (Jan van der Kamp)

Milan à bec jaune *Milvus migrans parasitus* montrant un stress thermique : halètement, yeux mi-clos et manteau, couvertures alaires et sous-caudales ébouriffées, Mali, 24 novembre 2013 (Jan van der Kamp)

and upperwing-coverts being raised, apparently to permit cooling (Fig. 3). The second preening bout lasted three minutes, and was followed by sunning behaviour, first with a wing-spread posture, then in a delta-wing posture with eyes partially closed and occasional panting with half-open bill (Fig. 4). The latter posture graded into a sunning posture in which the tail alone was fanned (Fig. 5). Up to this point, the rectrices had remained closed whenever the bird was exposing its wings. The tail-fanning posture was accompanied by cooling behaviour, evident from the half-opened bill and from the feathers on the lower back that were lifted. In total, preening and sunning occupied 17 minutes, of which 12 minutes were spent in sunbathing postures, at a time of day when the sun was at or near its zenith.

Sunning is used here as defined by Simmons (1986: 1): behaviour in which a bird deliberately positions itself in the rays of the sun (electromagnetic radiation, solar radiation, solar energy, insolation), often adopting a special posture. This definition precludes drying after rain. Sunning behaviour is widespread among birds, and has been described for hundreds of species in tens of passerine and non-passerine families, in temperate, subtropical and tropical regions across the world (Kennedy 1969, Prinzing 1983, Simmons 1986). Among raptors, sunning is common behaviour, although some species, like vultures (spread-wing and delta-wing; Houston 1980, Simmons 1983), Bateleur *Terathopius ecaudatus* (spread-wing; Cade 1973) and European Honey Buzzard *Pernis apivorus* (delta-wing; Bijlsma 1997) appear to be more



Figure 5. Yellow-billed Kite *Milvus migrans parasitus* in delta-wing posture, bill half-open and right eye closed, Mali, 24 November 2013 (Jan van der Kamp)

Milan à bec jaune *Milvus migrans parasitus* en posture ailes-delta, bec mi-ouvert et l'oeil droit fermé, Mali, 24 novembre 2013 (Jan van der Kamp)

Figure 6. Yellow-billed Kite *Milvus migrans parasitus* in tail-spread posture, simultaneously panting with mantle feathers lifted, Mali, 24 November 2013 (Jan van der Kamp)

Milan à bec jaune *Milvus migrans parasitus* montrant à la fois queue-en-éventail, halètement et plumes du dos gonflées, Mali, 24 novembre 2013 (Jan van der Kamp)

prone to engage in such behaviour than others (Cade 1982, Cade *in* Simmons 1986: 72, Bijlsma *et al.* 1999, Bijlsma 2001, Potters 2001). Despite having observed thousands of Yellow-billed Kites across Africa, mainly in November–March, this was our first observation of a bird sunning at a time of day when most raptors in Africa typically seek protection from the sun.

In line with Simmons (1986), sunning may be regarded as a subsidiary form of comfort behaviour and feather care. Circumstantial and some experimental evidence suggests that killing or exposing ectoparasites to removal by preening may be an important function of sunbathing (Moyer & Wagenbach 1995, Blem & Blem 2000, Saranathan & Burt 2007). Most sunbathing occurs during the hottest part of the day or when the sun breaks through cloud cover, in temperate regions almost exclusively in summer (Simmons 1986). The birds use exposed sites and sometimes require cooling behaviour to prevent hyperthermia. Killing ectoparasites may increase fitness, but that does not explain why sunbathing is rarely observed in some raptors (e.g. Common Buzzard *Buteo buteo*; Bijlsma 2001) and frequently

in others (European Honey Buzzard; Bijlsma 1997). In Western Europe, the latter frequently starts sunning when conditions permit, almost always adopting a delta-wing posture (Bijlsma 1997). In a tame, but free-flying, juvenile in the Netherlands sunning was recorded in 13 bouts (but occurred more frequently) each of 100–900 seconds duration (mean 303 seconds, S.D. = 209) between 17 and 21 September 1997, when ambient temperatures were 17–24°C. This bird did most of its sunning between 09.00 and 12.00 hrs, and only when the sun was fierce. In contrast, sunning in Common Buzzards and Yellow-billed Kites has rarely been recorded, despite these species being widespread and common in Europe and Africa, respectively. Is there a difference in parasite load between species, and if so, is phyletic heritage involved, or geography, habitat use and feeding habits?

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